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(54) Title: CARBONIC ANHYDRASE ACTIVATORS FOR ENHANCING LEARNING AND MEMORY

(57) Abstract: The invention provides a method for improving attentive cognition comprising administering a compound that po-
tentiated intraneuronal carbonic anhydrase activity thereby improving establishment of a theta rhythm.

INTERNATIONAL SEARCH REPORT

PCT/US02/13784

Continuation of B. FIELDS SEARCHED Item 3:

Databases Searched: EAST, CAPLUS, MEDLINE

Search Terms: carbonic anhydrase, imidazole, alanine, phenylalanine, phenethylamine, histamine, histidine, triazole, cognition, cognitive, learn, learning, learned, Alzheimer, stroke, hypoxia, ischemia, and brain.

INTERNATIONAL SEARCH REPORT

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CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 31/417, 31/4172, 31/198

US CL : 435/325, 183, 424/78.15, 514/2, 176, 359, 396, 631, 638, 235.8

According to International Patent Classification (IPC) or to both national classification and IPC

FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/325, 183, 424/78.15, 514/2, 176, 359, 396, 631, 638, 235.8

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Base See Continuation Sheet

DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X, P | SUN et al. Pharmacological Enhancement of Synaptic Efficacy, Spacial Learning, and Memory through Carbonic Anhydrase Activation in Rats. Pharmacology And Experimental Therapeutics. June 2001, Vol. 297, Issue 3, pages 961-967, see entire document. | 1-19 |
| Y, P | WO 01/93744 A2 (THE GOVERNMENT OF THE UNITED STATES OF AMERICA, as represented by THE SECRETARY OF HEALTH AND HUMAN SERVICES) 13 December 2001 (13.12.2001), see entire reference. | 1-19 |
| Y | SUN et al. Theta Rythum of Hippocampal CA1 Neuron Activity: Gating by GABAergic Synaptic Depolarization. The Journal of Neurophysiology. January 2001, Vol. 85, No.1, pages 269-279, see entire document. | 1-18 |
| Y | SUPURAN et al. Carbonic Anhydrase Activators: Synthesis of High Affinity Isozymes I, II, and IV Activators, Derivatives of 4-(arylsulfonylureido-amino acyl)ethyl-1H-imidazole. Enzyme Inhibition. 2000, Vol. 15, No.5, pages 471-86, see abstract. | 1-19 |

☒ Further documents are listed in the continuation of Box C.

See patent family annex.

Special categories of cited documents:

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document member of the same patent family

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(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| Y | BRIGANTI et al. Carbónic Anhydrase Activators: X-ray Crystallographic and Spectroscopic Investigations for the Interaction of Isozymes I and II with Histamine. Biochemistry. 1997, Vol. 36, pages 10384-10392, see entire document. | 1-18 |
| Y | WO 85/03869 A1 (ERK, VERNON) 12 September 1985 (12.09.1985), See entire reference. | 1-19 |
| Y | EP 0 387 867 A1 (G.D. SEARLE & CO.) 19 September 1990 (19.09.1990), see entire reference. | 1-19 |
| Y | US 5,972,684 A (BANDMAN et al) 26 October 1999 (26.10.1999), see, col. 2, lines 11-68, col. 3 lines 1-37, col. 20, lines 51-62, col. 21, lines 17-29. | 1-19 |